UNITED STATES PATENT AND TRADEMARK OFFICE

APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/659,686	09/09/2003	Andreas Loew	PD020092	7536

24498 7590 02/05/2008	EXAMINER	
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Please find below and/or attached an Office communication concerning this application or proceeding.

The time period for reply, if any, is set in the attached communication.

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE <u>3</u> MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.
- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

1) ☒ Responsive to communication(s) filed on <u>09 September 2003</u>.

2a) ☐ This action is **FINAL**.   2b) ☒ This action is non-final.

3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

4) ☒ Claim(s) <u>*1-12*</u> is/are pending in the application.

    4a) Of the above claim(s) _____ is/are withdrawn from consideration.

5) ☐ Claim(s) _____ is/are allowed.

6) ☒ Claim(s) <u>*1-12*</u> is/are rejected.

7) ☐ Claim(s) _____ is/are objected to.

8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

9) ☐ The specification is objected to by the Examiner.

10) ☒ The drawing(s) filed on <u>09 September 2003</u> is/are: a) ☒ accepted or b) ☐ objected to by the Examiner.

    Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).

    Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).

11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).

    a) ☐ All   b) ☐ Some * c) ☐ None of:

        1. ☐ Certified copies of the priority documents have been received.

        2. ☐ Certified copies of the priority documents have been received in Application No. _____.

        3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

    * See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

1) ☒ Notice of References Cited (PTO-892)

2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)

3) ☒ Information Disclosure Statement(s) (PTO/SB/08)
    Paper No(s)/Mail Date _____.

4) ☐ Interview Summary (PTO-413)
    Paper No(s)/Mail Date _____.

5) ☐ Notice of Informal Patent Application

6) ☐ Other: _____.

DETAILED ACTION

Claim Rejections - 35 USC § 102

1.   The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that

form the basis for the rejections under this section made in this Office action:

> A person shall be entitled to a patent unless –
>
> .(e) the invention was described in (1) an application for patent, published under section 122(b), by another filed in the United States before the invention by the applicant for patent or (2) a patent granted on an application for patent by another filed in the United States before the invention by the applicant for patent, except that an international application filed under the treaty defined in section 351(a) shall have the effects for purposes of this subsection of an application filed in the United States only if the international application designated the United States and was published under Article 21(2) of such treaty in the English language.

2.   Claims 1-10 and 12 are rejected under 35 U.S.C. 102(e) as being anticipated by

Shiomi (US-6,791,615).

        Regarding **claim 1**, Shiomi discloses a method for the correction of video signals

which are transmitted pixel by pixel as digital pixel values alternately via at least two

channels having different transfer characteristics (abstract; Fig. 3; CH1 and CH2),

characterized in that, from the pixel values transmitted via a first channel, estimated

values for the pixels of a second channel are formed by means of interpolation (Figs. 3

and 4; wherein average value calculation 30-32 blocks of the unbalance amount

calculation circuit 18 are interpreted as a means of interpolation; Col. 7, Ln. 1-45), and

in that correction values for the pixel values of the second channel are derived from

differences between the estimated values and the pixel values of the second channel

(Fig. 3; see subtraction circuit 36 and 37; Offset Adjustment circuit 12 and 13; Col. 5, Ln. 52-Col. 6, Ln 30; Col. 7, Ln. 40-68).

Regarding **claim 2**, Shiomi discloses the method according to claim 1, characterized in that the correction values are only formed from those differences which are less than a predetermined value (K1) (Fig. 4; in order for the subtraction circuit 36 and 37 to produce a non- zero value, V1+2 is inherently less than V1 or V2; V1 or V2 is inherently be less than V1+2).

Regarding **claim 3**, Shiomi discloses the method according to claim 1, characterized in that, further estimated values are formed from pixel values which are transmitted by interpolation by means of the second channel (see Fig. 4; block 30), in that further differences are formed from the further estimated values and the pixel values of the first channel (see Fig. 4; block 32), in that an average value is in each case formed from the differences and the further differences, and in that the correction values are derived from the average values (Col. 7, Ln. 1-45).

Regarding **claim 4**, Shiomi discloses the method according to claim 2, characterized in that, further estimated values are formed from pixel values which are transmitted by interpolation by means of the second channel (see Fig. 4; block 30), in that further differences are formed from the further estimated values and the pixel values of the first channel (see Fig. 4; block 32), in that an average value is in each

case formed from the differences and the further differences, and in that the correction

values are derived from the average values (Col. 7, Ln. 1-45).

Regarding **claim 5**, Shiomi discloses the method according to claim 3,

characterized in that the differences and the further differences are in each case

subtracted from one another (Fig. 3; see subtraction circuit 36 and 37; Offset

Adjustment circuit 12 and 13), and in that the respective average value of the

differences is only used for correction if the value produced by subtraction of the

difference and the further difference is less than a further predetermined value (K2)

(Fig. 4; in order for the subtraction circuit 36 and 37 to produce a non- zero value,

V1+2 is inherently less than V1 or V2; V1 or V2 is inherently be less than V1+2).

Regarding **claim 6**, Shiomi discloses the Method according to claim 4,

characterized in that the differences and the further differences are in each case

subtracted from one another, and in that the respective average value of the

differences is only used for correction if the value produced by subtraction of the

difference and the further difference is less than a further predetermined value (K2)

(Fig. 4; in order for the subtraction circuit 36 and 37 to produce a non- zero value,

V1+2 is inherently less than V1 or V2; V1 or V2 is inherently be less than V1+2).

Regarding **claim 7**, Shiomi discloses the method according to claim 1,

characterized in that the differences and the further differences, for the purpose of

forming the correction values, are averaged separately according to the magnitude of the pixel values (see Fig. 4; average calculation circuit 30 and 31, 32), in that the correction values are written to a memory (it is inherent that average values are stored in some kind of memory buffer), and in that the correction values are read from the memory depending on the respective magnitude of the pixel values and are added to the pixel values of the first and/or the second channel (Fig. 4; see Offset Adjustment Circuit; pixel values from memory controller 8 and 10 are inherently added to negative OF2 and OF1 for offset adjustment).

Regarding claim 8, Shiomi discloses the method according to claim 3, characterized in that the averaging is in each case effected separately according to magnitude ranges of the pixel values (Fig. 4; in order for the subtraction circuit 36 and 37 to produce a non- zero value, V1+2 is inherently less than V1 or V2; V1 or V2 is inherently be less than V1+2), and in that correction values are obtained for the individual pixel values by interpolation and low-pass filtering of the mean values within the various magnitude ranges (Fig. 6; Col. 9, Ln. 9-Col. 10, Ln. 27: Shiomi further teaches values of low pass filter 58-59 and offset setting circuit are inputted to Offset Addition circuit 62-63; it is inherent that values that pass through low pass filter 58-59 are within a predetermined frequency range).

Regarding claim 9, Shiomi discloses the method according to claim 7, characterized in that the averaging is in each case effected separately according to

magnitude ranges of the pixel values (Fig. 4; in order for the subtraction circuit 36 and 37 to produce a non- zero value, V1+2 is inherently less than V1 or V2; V1 or V2 is inherently be less than V1+2), and in that correction values are obtained for the individual pixel values by interpolation and low-pass filtering of the mean values within the various magnitude ranges (Fig. 6; Col. 9, Ln. 9-Col. 10, Ln. 27: Shiomi further teaches values of low pass filter 58-59 and offset setting circuit are inputted to Offset Addition circuit 62-63; it is inherent that values that pass through low pass filter 58-59 are within a predetermined frequency range).

Regarding **claim 10**, Shiomi discloses the method according to claim 1, characterized in that the only pixel values which are evaluated are those which change at a rate (f) which is below a cut-off frequency (F) (Fig. 6; see low pass filter 58-59; it is inherent that values that pass through low pass filter 58-59 are below a cut-off frequency and evaluated).

Regarding **claim 12**, Shiomi discloses the method according to claim 10, characterized in that the cut-off frequency depends on the predetermined value (K1) or on the further predetermined value (K2) (Fig. 6; see low pass filter 58-59; it is inherent that values that pass through low pass filter 58-59 are below a cut-off frequency and evaluated).

Claim Rejections - 35 USC § 103

3.   The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all

obviousness rejections set forth in this Office action:

> (a) A patent may not be obtained though the invention is not identically disclosed or described as set
> forth in section 102 of this title, if the differences between the subject matter sought to be patented and
> the prior art are such that the subject matter as a whole would have been obvious at the time the
> invention was made to a person having ordinary skill in the art to which said subject matter pertains.
> Patentability shall not be negatived by the manner in which the invention was made.

4.   Claim 11 rejected under 35 U.S.C. 103(a) as being unpatentable over Shiomi in

view of Hooks (US-4,463,380).

Regarding **claim 11**, Shiomi fails to explicitly disclose the method according to

claim 1, characterized in that the only pixel values which are evaluated are those which

change at a rate which is below the Nyquist frequency (N/4).

In the same field of endeavor, Hooks teaches a low pass filter is provided (156)

for each of the three channels , which bandwidth limits the signal to below the Nyquist

frequency which corresponding to the maximum pixel rate (Col. 15, Ln. 55-68). In light

of the teaching from Hooks, it would have been obvious to one of ordinary skill in the art

at the time the invention was made to modify the device of Shiomi by incorporating a

low pass filter with bandwidth limits to signal below Nyquist frequency in order to obtain

maximum pixel rate (Hooks: Col. 15, Ln. 55-68).

Conclusion

5.   The prior art made of record and not relied upon is considered pertinent to

applicant's disclosure.

a) Furuhata (US-6,924,840) discloses a group of two row photo conversion elements having a plurality of output.

b) Maki (US-5,801,850) discloses a linear sensor having plurality of sensor rows.

c) Shekter (US-2005/0,276,515) discloses system manipulation noise in digital images wherein a low pass filter passes only energy below 0.25 cycles per pixel without violating Nyquist sampling limit.

6.   Any inquiry concerning this communication or earlier communications from the examiner should be directed to Hung H. Lam whose telephone number is 571-272-7367. The examiner can normally be reached on Monday - Friday 8AM - 5PM.
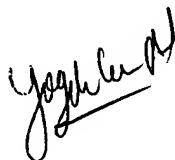
If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, LIN YE can be reached on 571-272-7372. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see http://pair-direct.uspto.gov. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

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